1262907

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RELATED PCT APPLICATION NUMBER: *PCT/US04/36861*

Certified by

Jon W Dudas

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for Intellectual Property
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PTO/SB/16 (08-03)
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. EU873359578

INVENTOR(S)		
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Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max)

PORTABLE WATER DRINKING TROUGH FOR PETS

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☑ Specification *Number of Pages* 11 ☐ CD(s), Number _____

☑ Drawing(s) *Number of Sheets* 27 ☐ Other (specify) _____

☐ Application Date Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☑ Applicant claims small entity status. See 37 CFR 1.27.

☑ A check or money order is enclosed to cover the filing fees.

☑ The Director is herby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 502481

☐ Payment by credit card. Form PTO-2038 is attached.

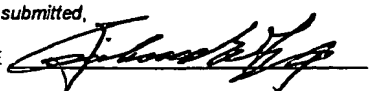
FILING FEE Amount ($): $80.00

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☑ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE 

TYPED or PRINTED NAME RICHARD E. LYON, JR.

Date 11/05/2003

REGISTRATION NO. 26,300 *(if appropriate)*

Docket Number: 088159.2

TELEPHONE (213) 896-2510

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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PROVISIONAL PATENT APPLICATION

of

PRODROMOS PERICLES STEPHANOS

PORTABLE WATER DRINKING TROUGH FOR PETS

Background of the Invention

The present invention relates to portable drinking devices for pets and particularly for dogs. The provision of food and water care for dogs and other animal pets is today often approached with virtually the same diligence as applied to human family members. Because of the strong emotional bond between dogs and their owners, dogs are frequently taken on both recreational and exercise excursions. While on these excursions, food and water for dogs is very important. There are many dry dog food and treats which are readily portable and easily dispensable without undue mess and cleanup. Water, however, is frequently a problem. A bottle of water and some form of bowl or cup provides the dog with a portable water supply and drinking apparatus but is often an inconvenient method of providing the dog with a drink of water, particularly if on foot. Drinking water is now provide by numerous sources in what are termed "sports bottles," which are manufactured in a variety of sizes (*e.g.*, 8-oz., 16-oz., 32-oz., etc.) yet have the same diameter neck collar, the same 7 mm spacing between the neck collar and the water

bottle shoulder and a screw-on cap generally provided with a push-pull flow nozzle. It would be highly desirable to provide a mechanism by which the standardization of the configuration of readily available sports bottles which has evolved over the years could be effectively utilized in the provision of a portable drinking trough for pets. Applicant has developed a novel clip and trough assembly which obtains that result.

Description of The Preferred Embodiments

Figures 1-8 illustrate the configuration and use of a first embodiment of the present invention. Figure 1 is a side view of the trough and clip assembly of the present invention operatively connected to a sports bottle in the serving position. As seen therein, the clip 10, preferably formed of a durable and resilient plastic or resin material such as that marketed under the trademark DELRIN® by DuPont, is affixed to the rear side of the trough 12 for releasable attachment to a water-filled sports bottle 14. The trough 12 is preferably formed of plastic, is about 150 to 170 mm in length and about 77 mm wide and has a graduating depth of about 40 to 50 mm. The trough 12 preferably defines a oval perimeter and curved or tapered bottom so as to at least partially fit about various diameter sports bottles and to permit adequate and comfortable access of pet's muzzle for lapping and drinking water. The inside of the bottom of the water trough may be provided with forwardly radiating, arcuately rounded ridges (ripple appearance) about 2 mm high by 2 mm wide which act as flow inhibitors to retard slightly the flow of water toward the

forward end 12a of the trough. Such ripples could also provide a trade dress/design feature. The forward end 12b of the trough 12 (see Figure 1) is preferably provided with a vertical wall of about 15 mm in height to stop or reduce water spills from that end of the trough.

The clip 10 of the present invention is secured to the rearward end 12c of the trough and, in the embodiment of the invention shown in Figures 1-9, is provided with a base portion 16 which is secured to the trough by threaded fasteners 18. More preferably, the base portion of the clip could be molded into the rearward end of the trough 12 as will be discussed later herein. Clip 10 also includes an extension arm portion 20 that is pivotally connected to the base portion 16. Extension arm 20 is preferably about 60 mm in length by about 25 mm wide but can be otherwise dimensioned as required for its intended purpose. While a pivot pin 22 is shown in Figures 1-8 for the pivotal securement of the extension arm portion of the clip to the base thereof, other attachment mechanisms could be employed. For example, pivotal mounting could be provided by a rotary ratchet pivot 122, such as that illustrated in Figure 9, or by a molded living hinge 222, as illustrated in Figure 10. Stops 24 are employed as required in the particular connection/mounting area to limit the range of motion of the water trough when pivoted from the storage position to the serving position. In the embodiment shown in Figure 1, the stop 24 is defined by the surface on the upper end of base portion 16 against which the rearward side of the extension arm portion of the clip abuts when the trough is

rotated to the maximum desired position with respect to the sports bottle water container 14. The extent of the rotation of the trough 12 relative to the container 14 can be fixed at a desired serving position as illustrated in Figures 1 and 6. More preferably, the stop 24 would be configured such that the back of the extension arm 20 could be forced over the stop, whereupon the trough could be rotated until its rearward end 12c abutted the backside of extension arm 20. This would allow the pet owner to drink freely from the bottle unencumbered by the trough without having to detach the bottle from the clip, as illustrated in Figure 9.

Clip 10 also defines an attachment arm 28 at the extended end of extension arm portion 20. The attachment arm 28 is preferably integrally formed with extension arm 20 and is perpendicularly disposed with respect thereto. Note, however that the attachment arm 28 can be separately formed from the extension arm portion 20 of the clip and secured to arm portion 20 by threaded fasteners 21 as illustrated in Figures 2c, 3 and 4. The attachment arm 28 comprises two extended semi-circular arm portions 28a and 28b that are 7 mm thick and project approximately 35 mm so as to create a substantially semi-circular enclosure 30 having a diameter of 28 mm such that the attachment arm can easily and securely clip onto and grip the standard neck collar of a conventional sports water bottle. The 7 mm thickness of the attachment arm portions 28a and 28b enables the clip to fit snugly between the water bottleneck collar 14a and the shoulder 14b of the bottle 14 (*see, e.g.*, Figures 7-8), preventing any upward and downward wobble of the clip

10 when mounted on the bottleneck by filling the standardly dimensioned space (7 mm) between the collar 14a of the standard issue bottleneck and the shoulder 14b of that bottle. The clip 10 should preferably have approximately a ±5-7% expansion/stretch capability with respect to the inner diameter or transverse dimension (28 mm) defined by the attachment arm portions 28a and 28b to accommodate off-sized bottlenecks.

In use, the attachment arm 28 of clip 10 is pushed onto the portion of the water bottle 14 between collar 14a and shoulder 14b whereupon the natural resilience in arm portions 28a and 28b will secure the clip to the bottle 14, which in turn secures the bottle 14 to the trough 12. So secured, the bottle can be moved between a compact storage position, illustrated in Figure 5, wherein at least a portion of the water container is disposed within the interior of the trough 12 and a serving position, illustrated in Figures 1 and 6-8, wherein the trough is pivoted to an elevated position allowing for a desired amount of water to be dispensed into the trough for consumption by a pet, as shown in Figure 8. Allowing relative movement between the water bottle and trough beyond the serving position enables the trough to be moved sufficiently out of the way so that the pet owner could drink from the bottle without even having to detach the bottle from the trough as shown in Figure 9. As there is no backwash with sports bottles, and the push-pull nozzle typically employed on such bottles is sufficiently spaced from the water trough by virtue of

the attachment afforded by clip 10, there is no contact between the dog's muzzle and the water bottle nozzle.

A modified form of the invention is illustrated in Figure 10 which contains a series of illustrations showing a ratchet-type attachment between the extension arm portion of the clip and an upwardly projecting base member 111 formed at the rearward end of the trough. As seen therein, the clip 110 includes an attachment arm 128 identical to the attachment arm 28 of the prior embodiment, an extending arm portion 120 preferably integrally joined at one of its ends with attachment arm 128 and defining at its other end a pair of spaced-apart, generally circular, ratchet members 130. The ratchet members each define a circular array of inwardly ratchet teeth 132 thereon disposed about a central aperture 134. The base member 111 in trough 112 defines opposed outwardly projecting circular arrays of ratchet teeth 136 adapted to mate with the inwardly projecting teeth 130 on the clip 110. A pivot pin 138 extends transversely through base member 111 and projects outwardly from the opposed sides thereof along the central axis defined by the aligned pairs of ratchet teeth 132. Alternatively, a pair of outwardly projecting opposed hinge pins could be employed. The extended ends of pivot pin 138 project through the central apertures 134 in the ratchet members 130 on the clip 110. The natural resiliency in the plastic material of clip 110 is formed will maintain the ratchet teeth in an engaged position so as to prevent inadvertent relative rotation of the clip 110 with respect to the trough 114 while allowing for a deliberate rotation

thereof. Thus, through such a ratchet assembly, the desired angular orientation of the trough relative to the water bottle can be easily obtained and maintained by the user of the device.

Figure 11 illustrates another modification of the device wherein the clip 210 is pivotally connected to the rear or base of the trough 212 by means of a living hinge 222. Again, stops 224 are preferably provided so as to limit the pivotal movement afforded by the living hinge such that trough can be moved between the semi-nested and serving positions illustrated in Figure 11.

Another embodiment of the invention is illustrated in Figure 12 wherein the extension arm portion 320 of the clip 310 is provided with a second hinge or pivot 322. The addition of a second pivot point in the extension arm portion of the clip allows the clip 310 to be disposed almost entirely within the trough to facilitate storage and shipping of the product and allows the clip and trough to form a tripod configuration, as illustrated in Figure 13. The tripod configuration enables the trough to rest upright on the ground so that the pet can drink from the trough without the assistance of the owner. Such a clip configuration also moves the nozzle of the water sports bottle further from the pet's nose in the conventional serving position.

Figures 14a and 14b illustrate a hingeless embodiment of the present invention wherein the rearward end 412a of the trough 412 defines a plurality of

angularly disposed surfaces 413a and 413b at its extended upper end. The extended end 415 of the extension arm portion 420 of the clip 410 defines a pair of spaced-apart receiving areas 417a and 417b configured to receive and hold therein the multi-sided upper end of the trough. Receiving areas 417a and 417b are oriented such that when the rearward end 412c of the trough is snapped into area 417a, the trough and water bottle are positioned and secured in the folded or storage position; and when the end 412c of the trough is snapped into area 417b, the trough and water bottle are positioned and secured in the serving position, as illustrated in Figures 14a and b. If desired, finger grip indentations 419 can be provided in the sides of the trough 412' proximate the rearward end 412'(c) thereof to facilitate attachment of the clip 410 to the trough 412' (see Figure 14c). A series of photographs, Figures 15a-15f illustrate a prototype model embodying the hingeless embodiment of the present invention. As can be seen, these photographs also include a belt clip 400 integrally formed with clip 410 on the backside of the extension arm portion 420 of clip 410 to provide a convenient and inexpensive means for securing the present invention to the belt or waistband of the user's apparel. This belt clip 400 could be added to the other embodiments of the present invention as illustrated in Figure 16. Such a clip configuration utilizes the resilience in the plastic material of which the clip is formed to effect its securement about the user's apparel.

It should be noted that a pivot-type connection between the rearward upper end of the trough and the extension arm portion of the clip could be provided using a similar configuration (not shown) wherein the extended arm portion of the clip would define a single open cylindrical area as opposed to a pair of multi-sided openings, such as 417a and 417b and the upward rearward end of the trough would define a raised substantially cylindrical surface adapted to fit within the cylindrical area in the end of the clip extension arm in a snap fitment, somewhat similar to a ball and socket configuration, whereupon the clip could be pivoted relative to the trough about the cylindrical surface at the end of the trough.

Figures 16 and 17 illustrate yet another embodiment of the present invention wherein the clip 610 is again hingeless and is also integrally formed with the rearward end of the trough 612 and shaped such that the bifurcated attachment arm portion 628 of the clip 610 snaps about and grips the sports bottle 14 in the same spacing between the neck collar and water bottle shoulder in either the serving position illustrated in Figure 16 or the storage position illustrated in Figure 17.

A two-position, spring biased, clip assembly configuration is illustrated in Figures 18-20. As seen therein, the attachment arm portion 728 of the clip 710 defines a pair of attachment surfaces 729a and 729b at its inner end and a pair of gripping arm portions 728a and 728b at its outer end. The gripping arm portion

728a and 728b are as of the same configuration as discussed in the prior embodiments. The upper rearward end 712a of the trough 712 defines attachment surfaces 717a and 717b that are oriented relative to the attachment surfaces 729a and 729b on the clip 700 such that when the trough 712 and the sports bottle 14 are in the storage position, the attachment surfaces 729a and 729b on the clip 710 abut and mate with the attachment surfaces 717a and 717b, respectively, on the rear end of the trough. When the trough and sports bottle are in the pouring position, the attachment surfaces 729a and 729b abut and mate with the attachment surfaces 729b and 729a, respectively. A spring member 750 extends between the clip and trough and biases the clip against the trough so as to hold the mating attachment surfaces thereon together and thus maintain the trough and clip in either the storage or the serving position. To interchange their relative positions, the clip need only be pulled outwardly from the trough to disengage the mating attachment surfaces, the clip is then rotated 180° and released, whereupon the spring biasing member 750 will urge the clip back against the rearward end of the trough in the new position. As shown in the drawings, a coil spring, a bungee-type cord spring or another other suitable biasing means could be employed. Alternatively, an array of ratchet teeth 730 could be provided on the attachment arm 728 in lieu of the offset attachment surfaces 729a and 729b. The teeth would be disposed about the coil or other spring means 750 and would be adapted to mate with a corresponding

plurality of indentations formed on an attachment surface 717 on the rearward end of the trough. Such a concept is illustrated in Figure 20.

Various other changes and modifications can be made in carrying out the present invention without departing from the spirit and scope thereof.

1304513_v1

This is the desired "Serving Position" and attitude of bottle and of water tray.

A stop must be included in the hinge assembly which will prevent the pan from going down lower than shown here:

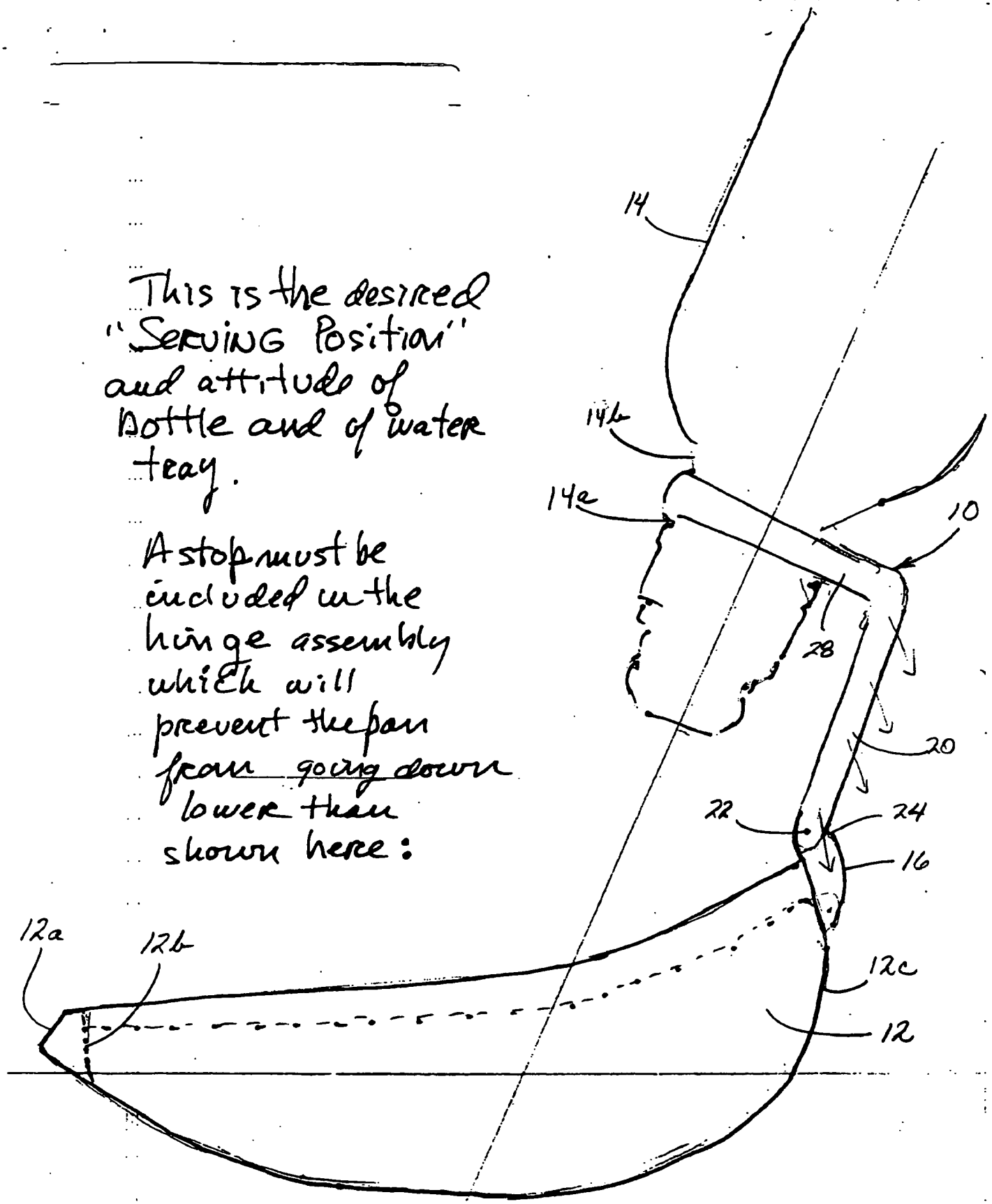
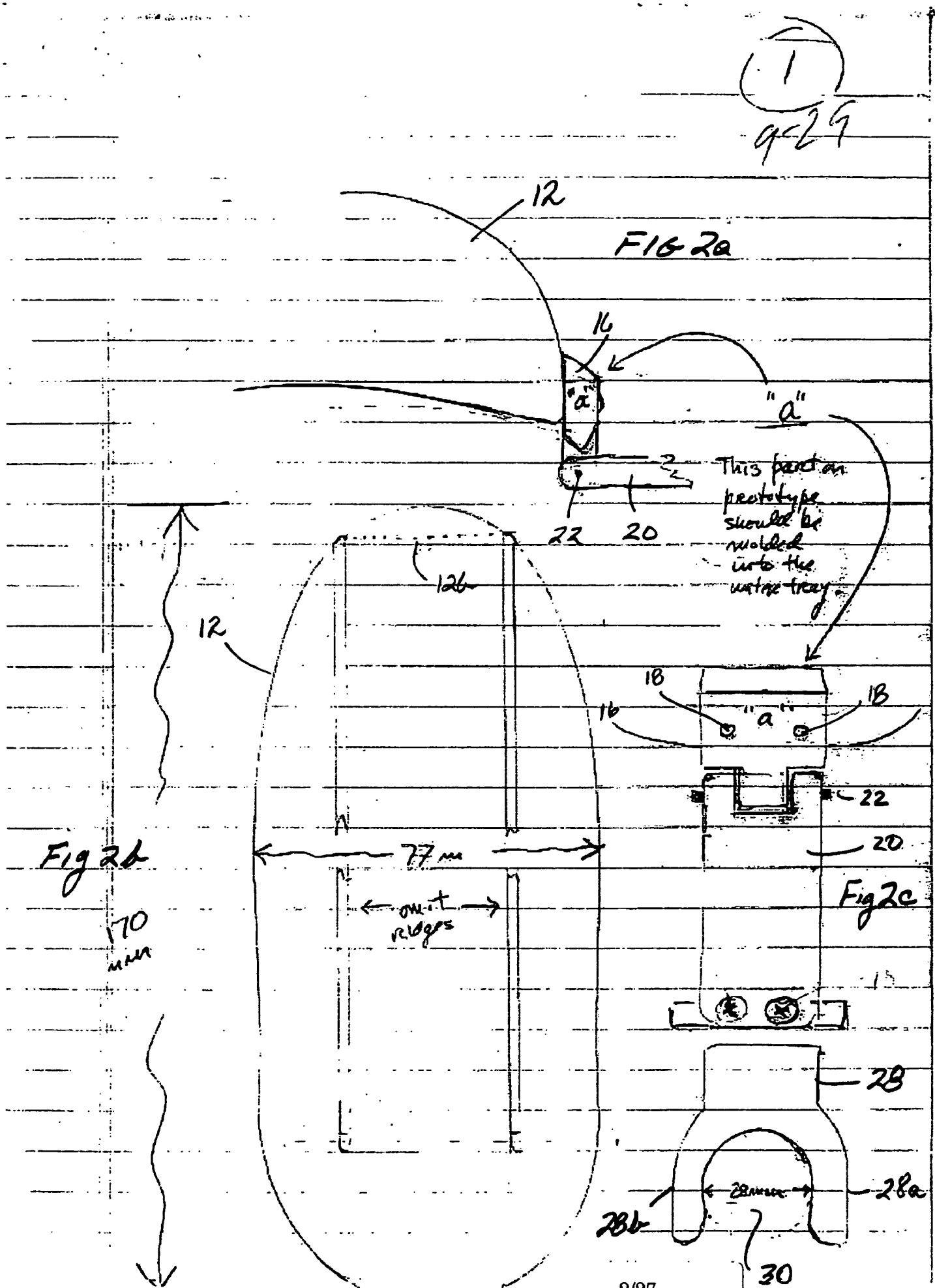


FIG. 1


1
of 24
FIG 2a
12
16
"a"
"a"
This part on prototype should be molded into the water tray.
22
20
12b
12
18
18
16
"a"
22
20
Fig 2c
Fig 2b
77 mm
70 mm
one-t ridges
28
28a
28b
30

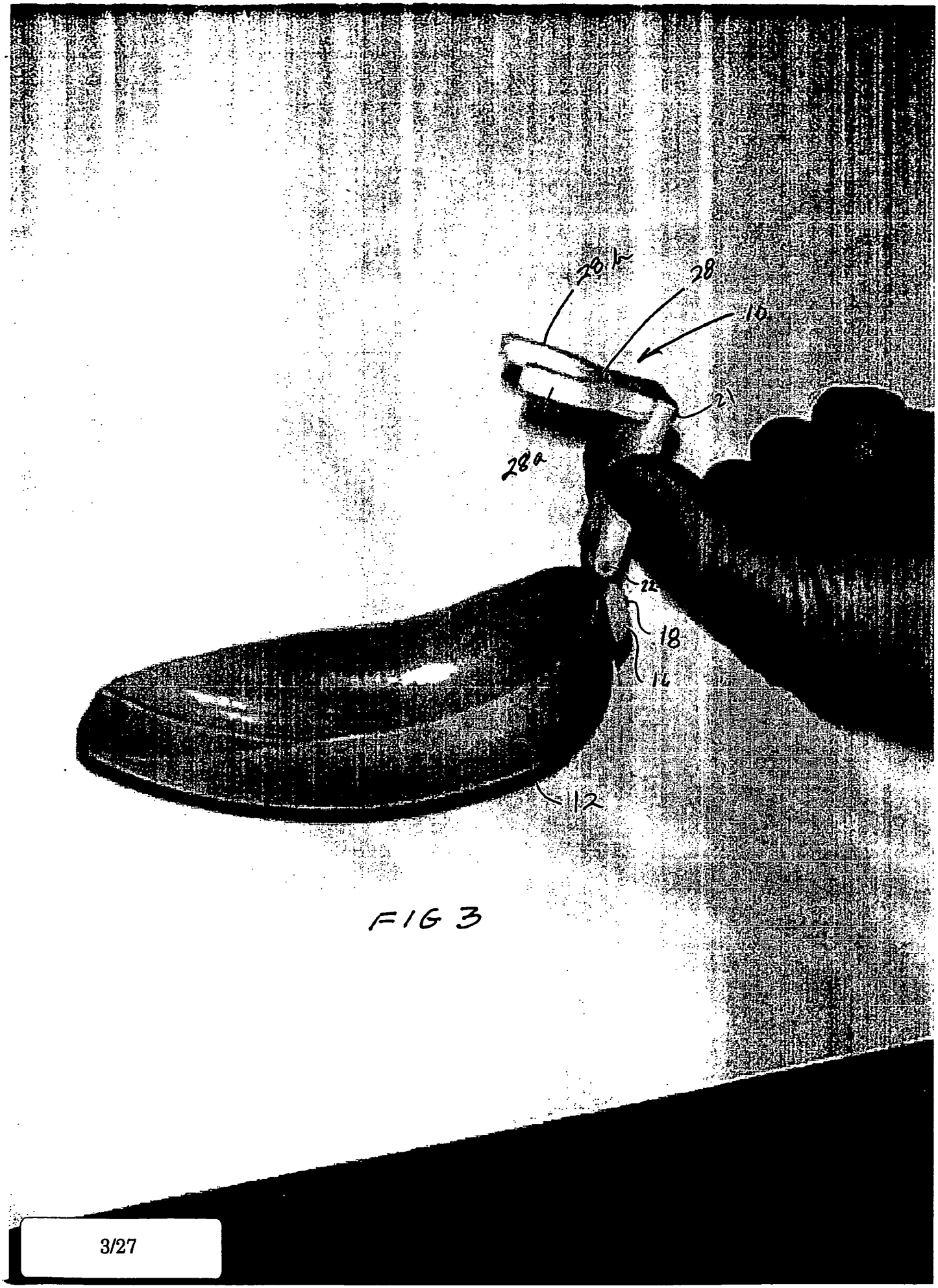


FIG 3

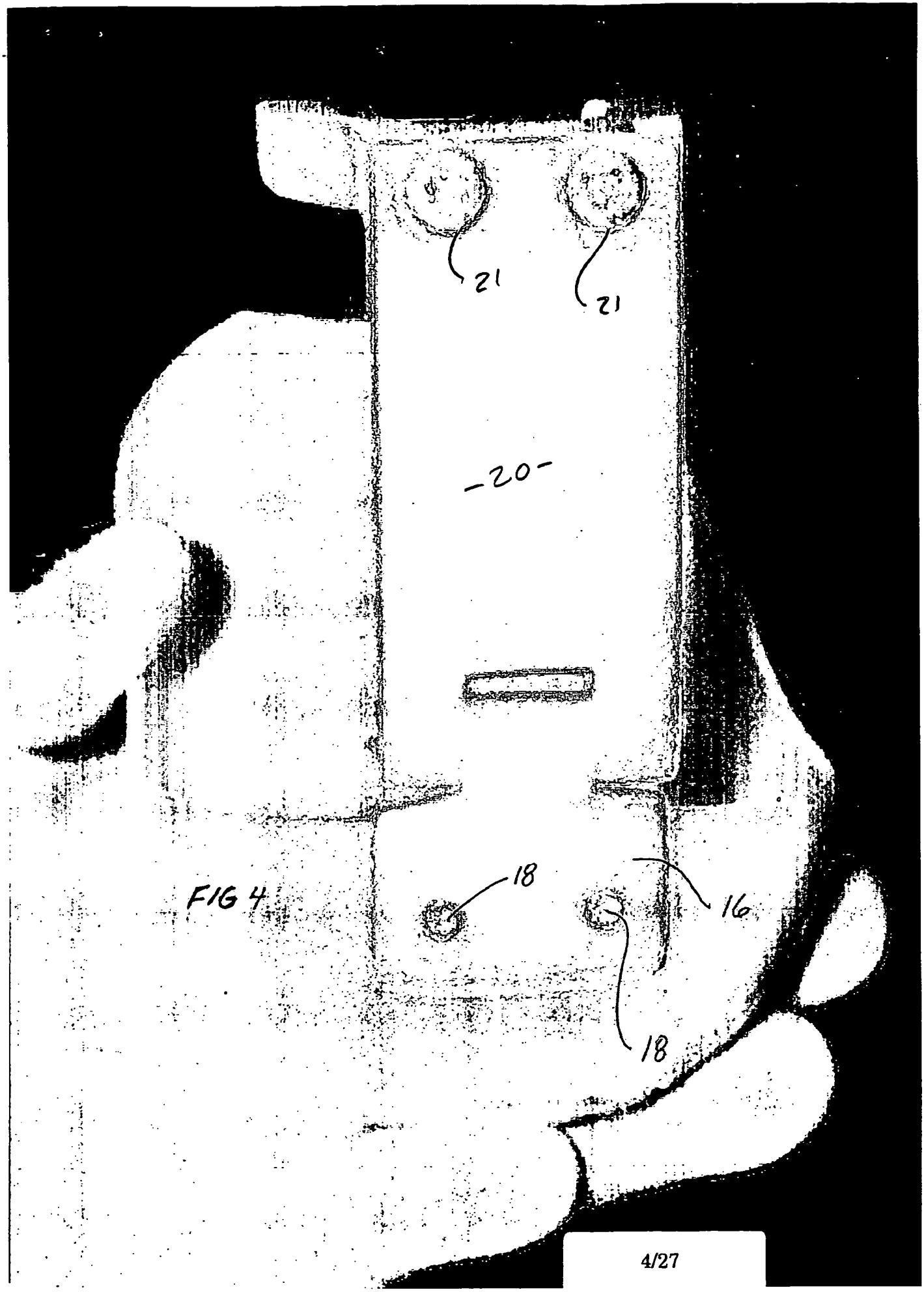


FIG 4

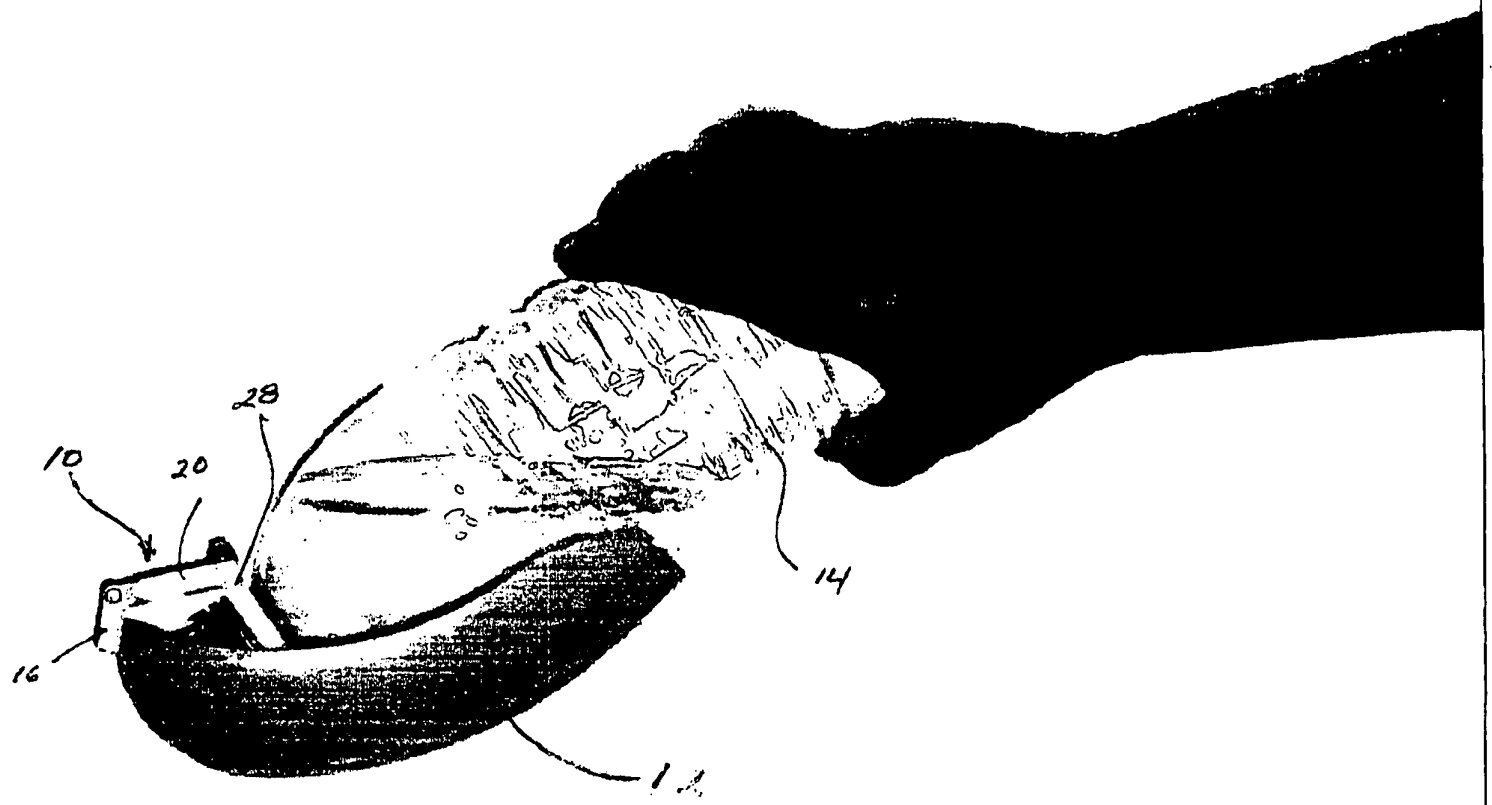


FIG. 5

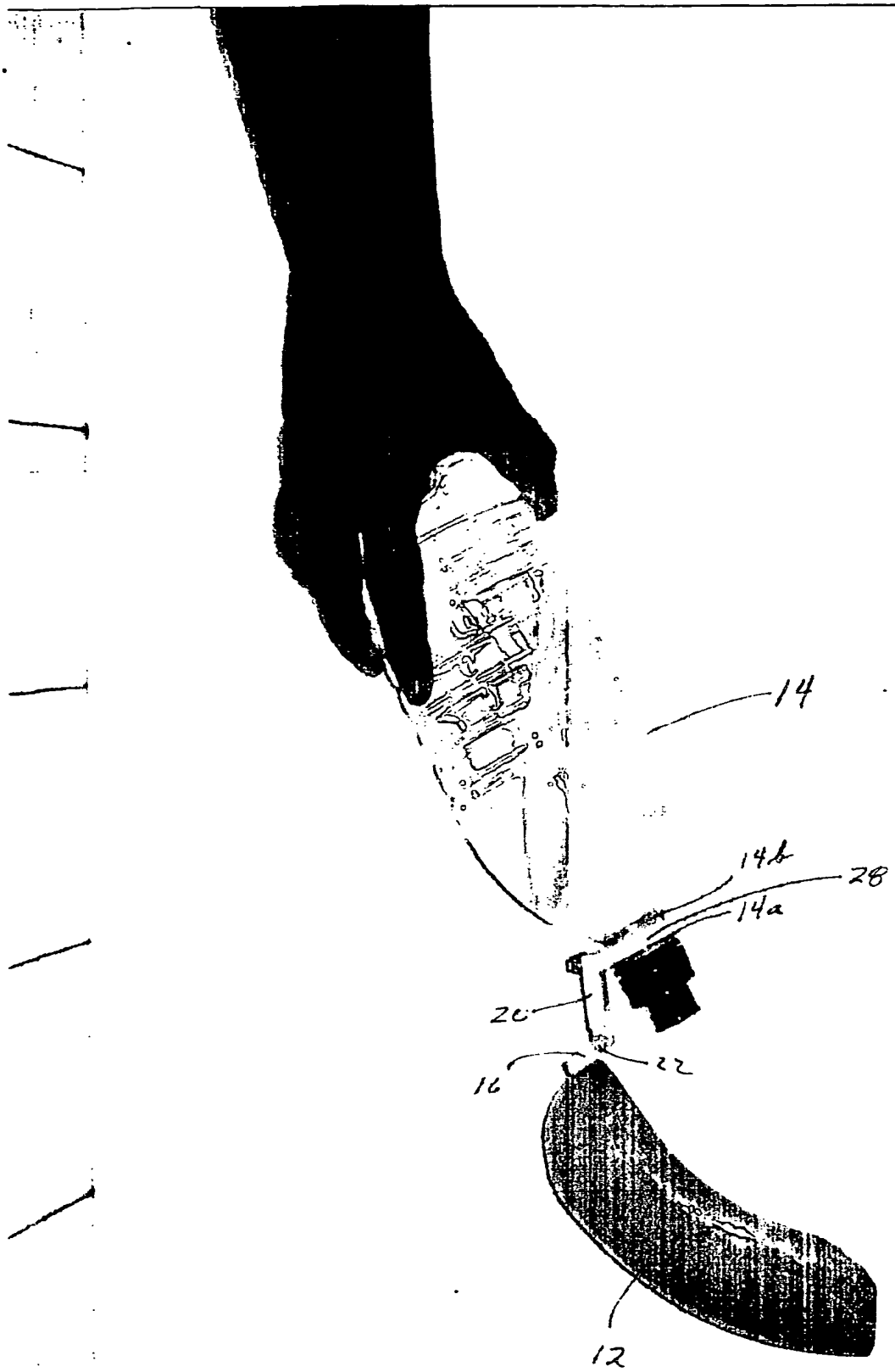


FIG 6

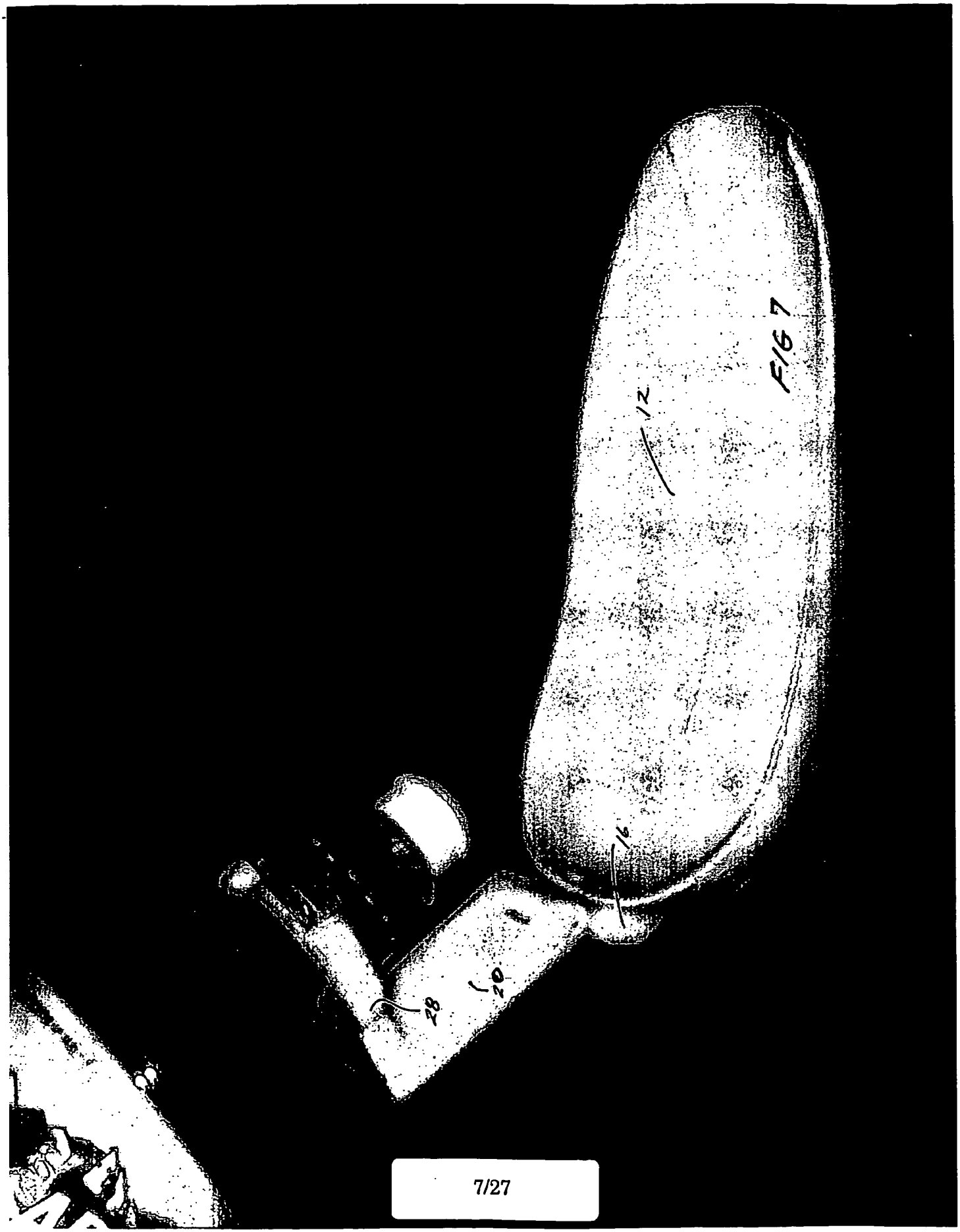


FIG 7

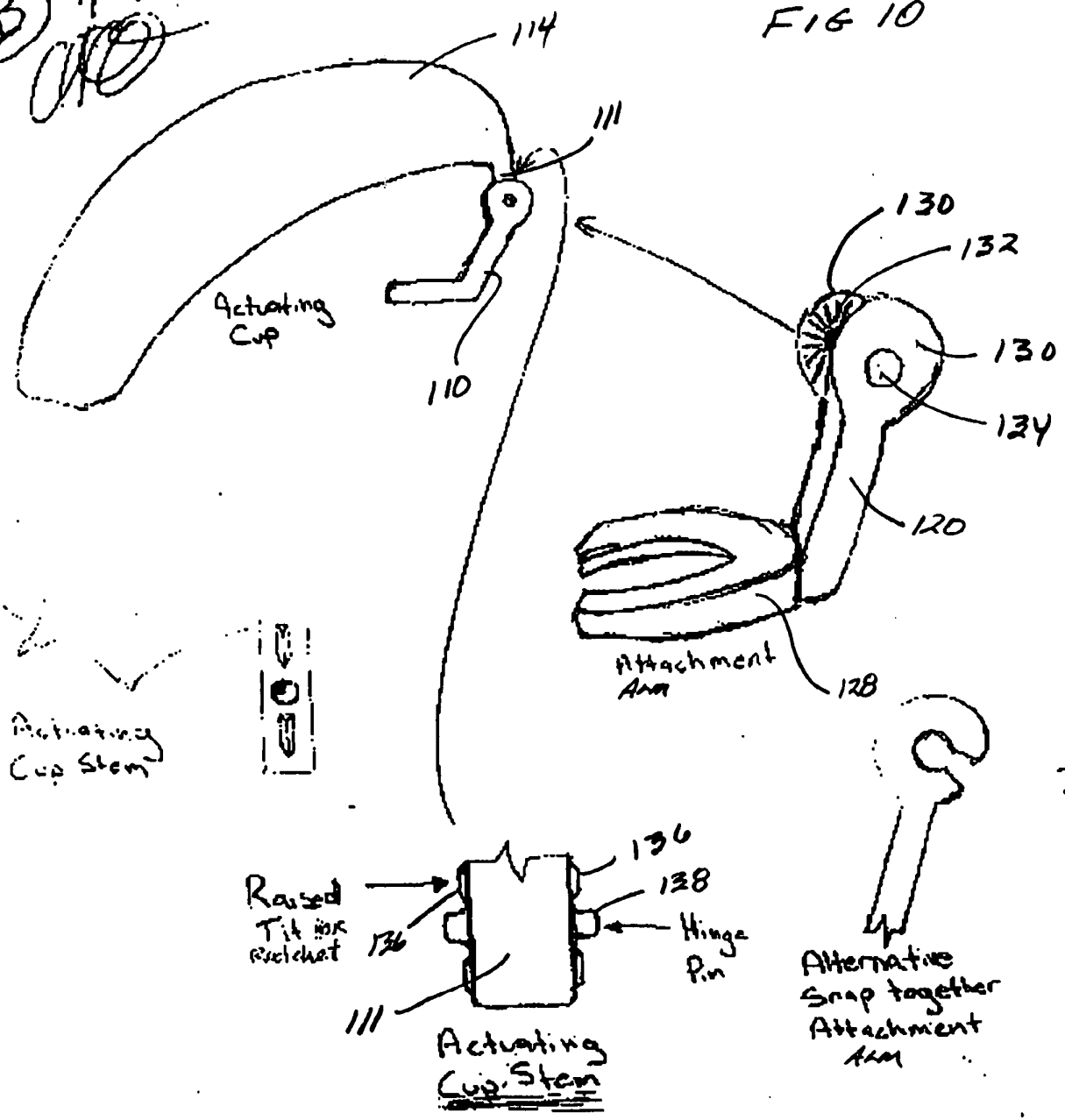
FIG 8

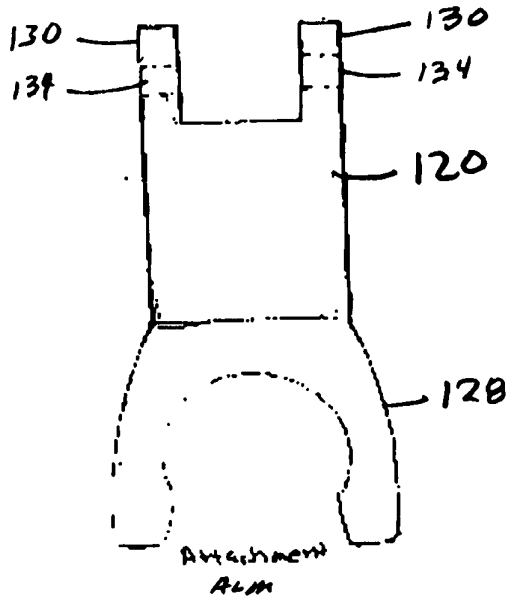
FIG 9

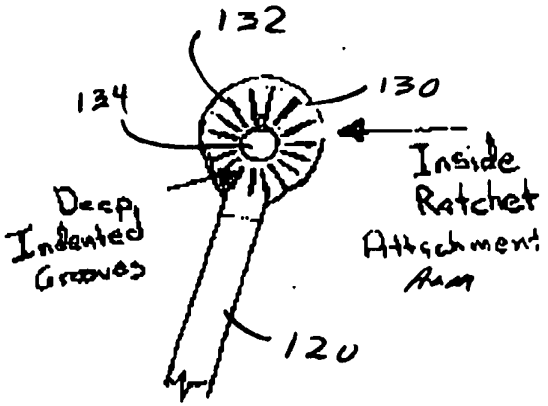
B 9/10/03

Rotary Ratchet

FIG 10







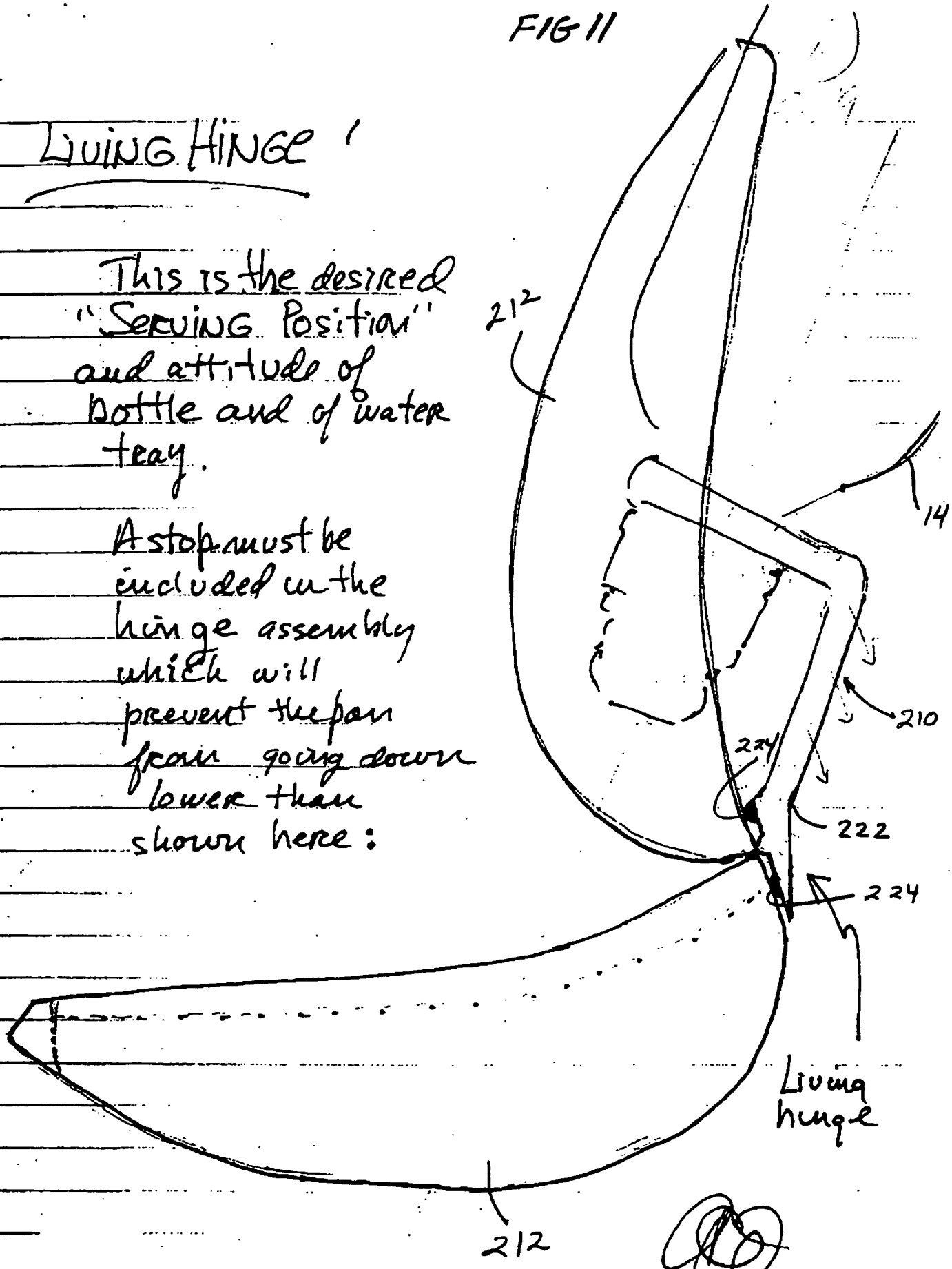
10/27

FIG 11

"Living Hinge"

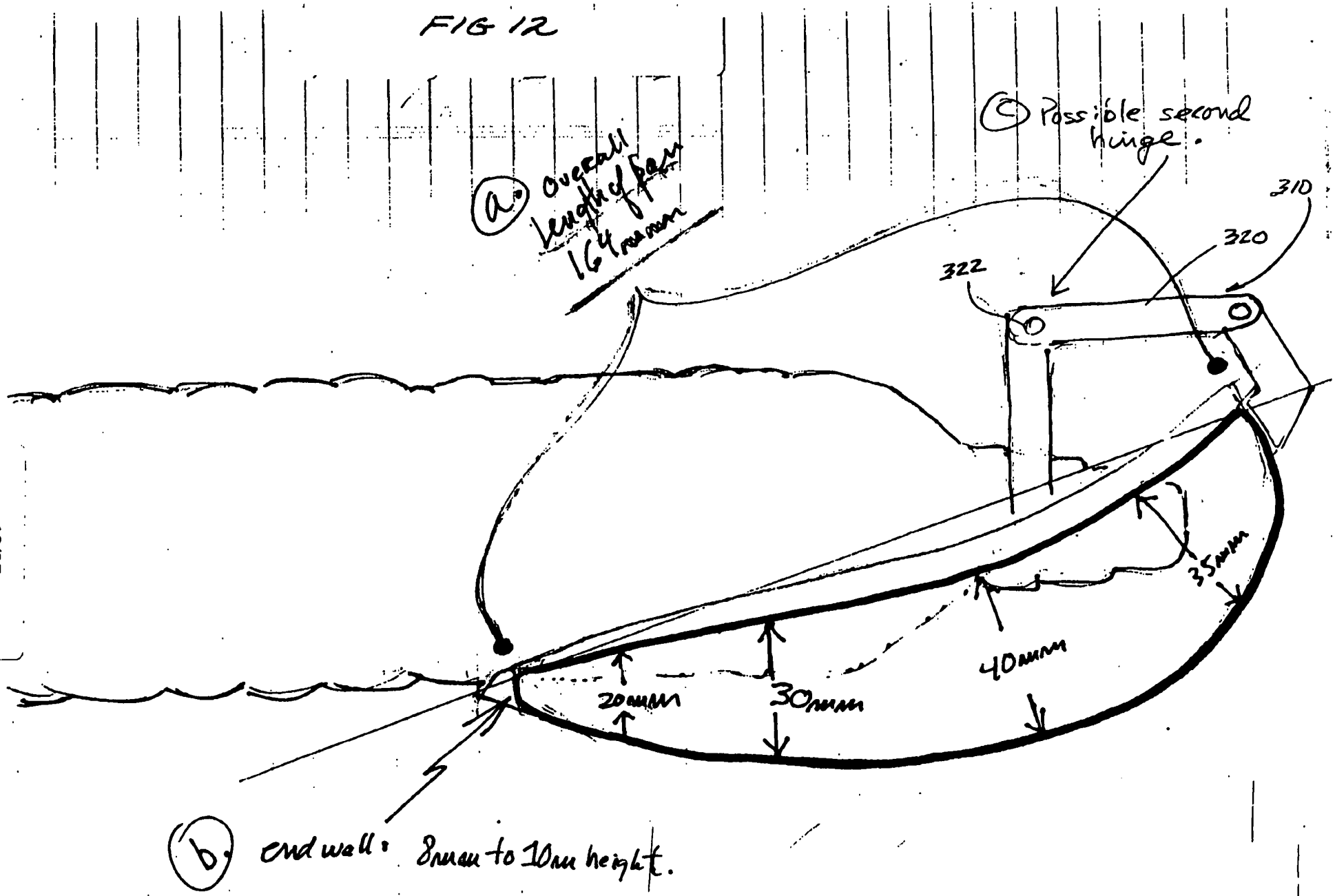
This is the desired "Serving Position" and attitude of bottle and of water tray.

A stop must be included in the hinge assembly which will prevent the pan from going down lower than shown here:



9-28-03

FIG 12


(a) overall length of foam 164mm
(c) Possible second hinge.
310
320
322
35mm
40mm
30mm
20mm
(b) end wall: 8mm to 10mm height.

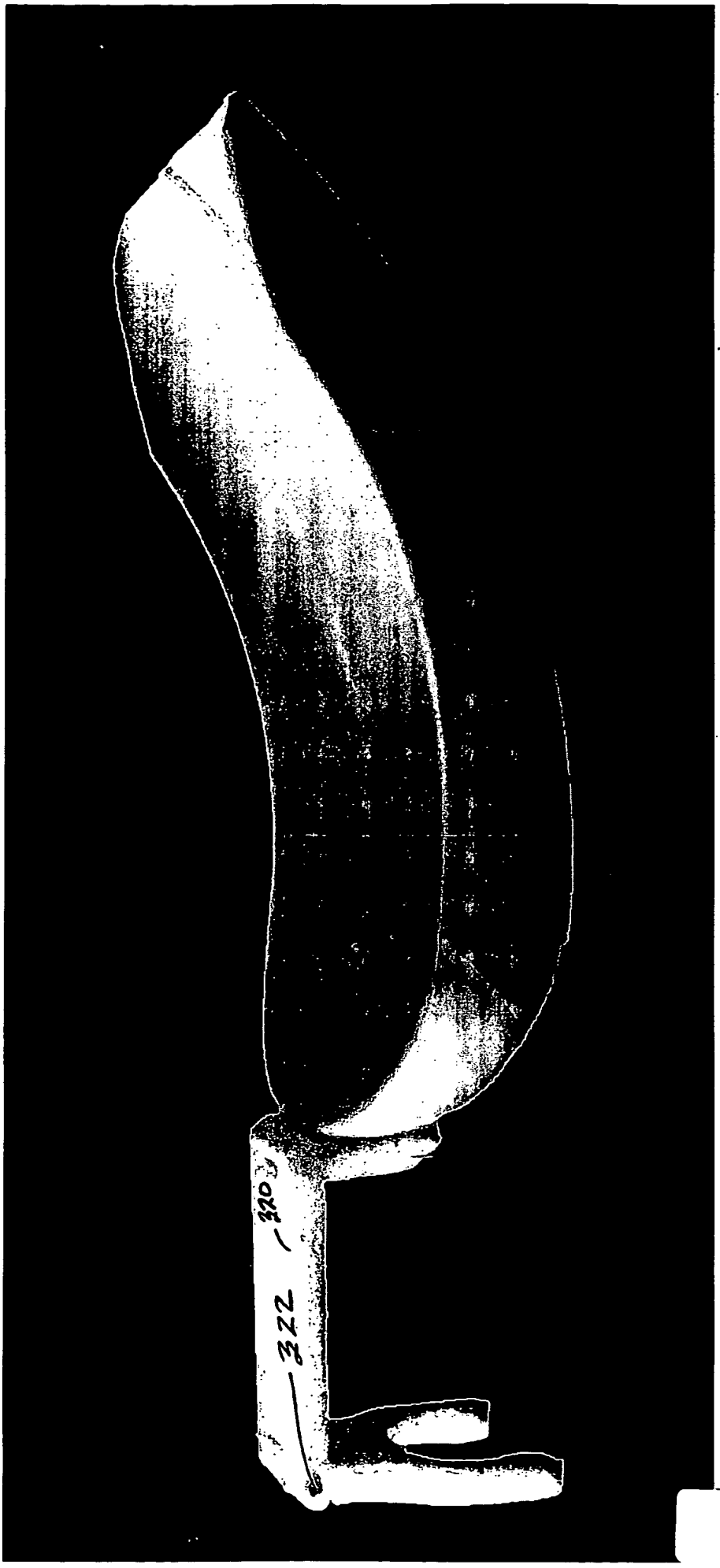


FIG 13

SNAP-IN CARPET

- No-hinge
- Two "snap-in" positions

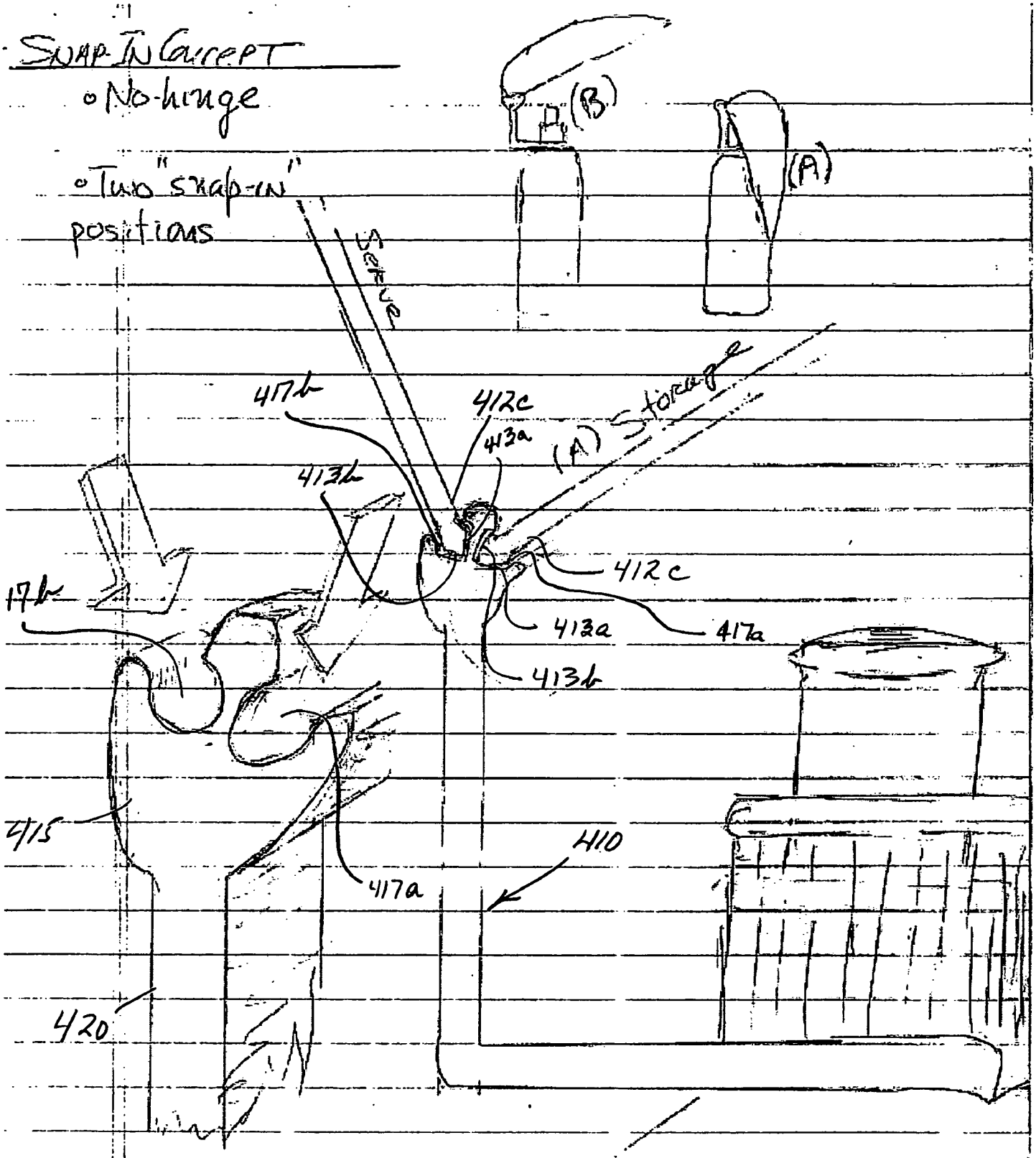


FIG. 14a

9-29-03

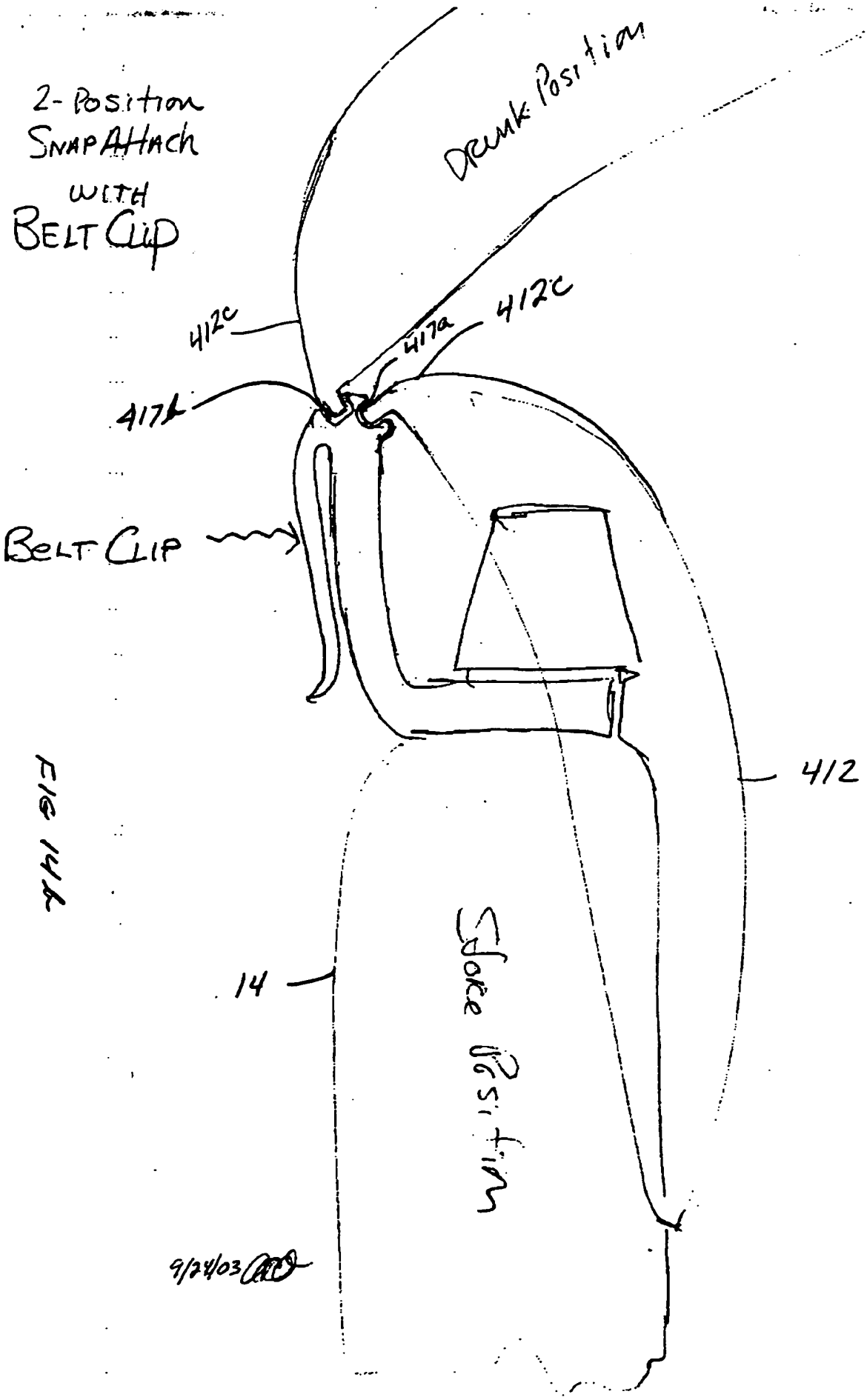
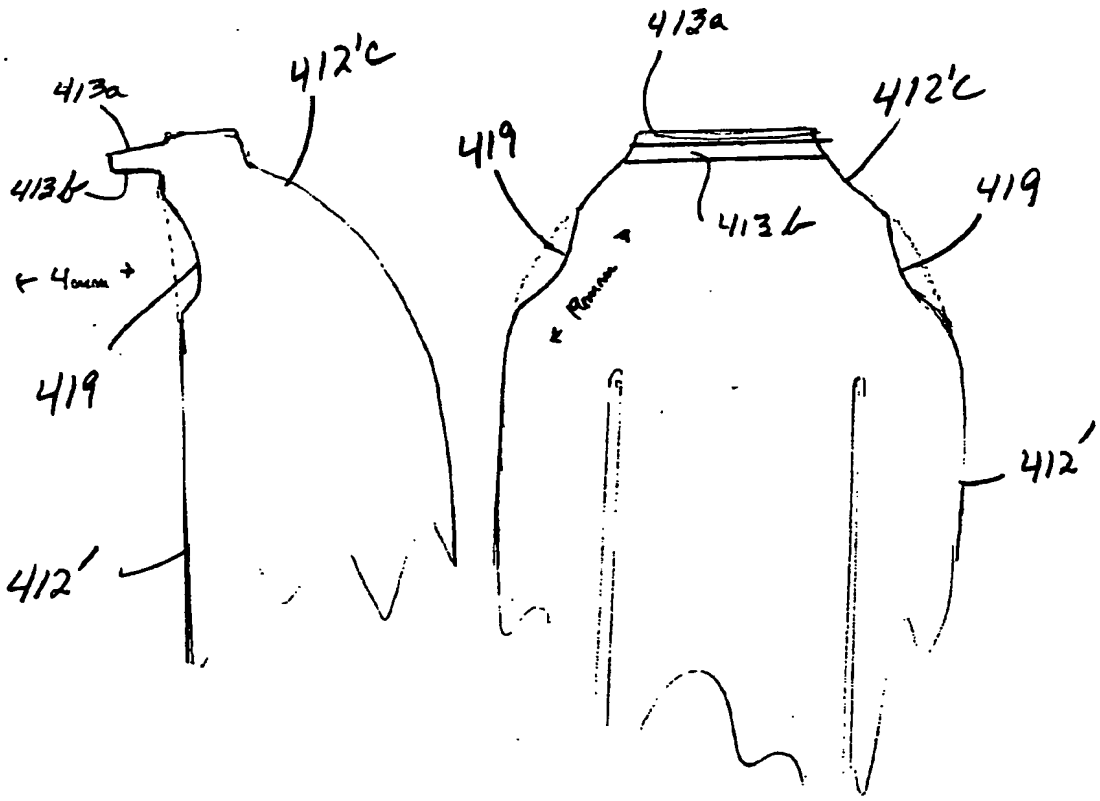

2-Position
Snap Attach
with
Belt Clip
Drunk Position
412c
417a
412c
417b
Belt Clip
412
14
Force Direction
9/24/03

Fig 14b

Pet 20 3rd attachment

Thumb + finger grips



1. secure grip
2. aid in location/registration of 2 prongs to receptacle openings
3. aid in insertion/extraction

FIG 14c

10/29/03

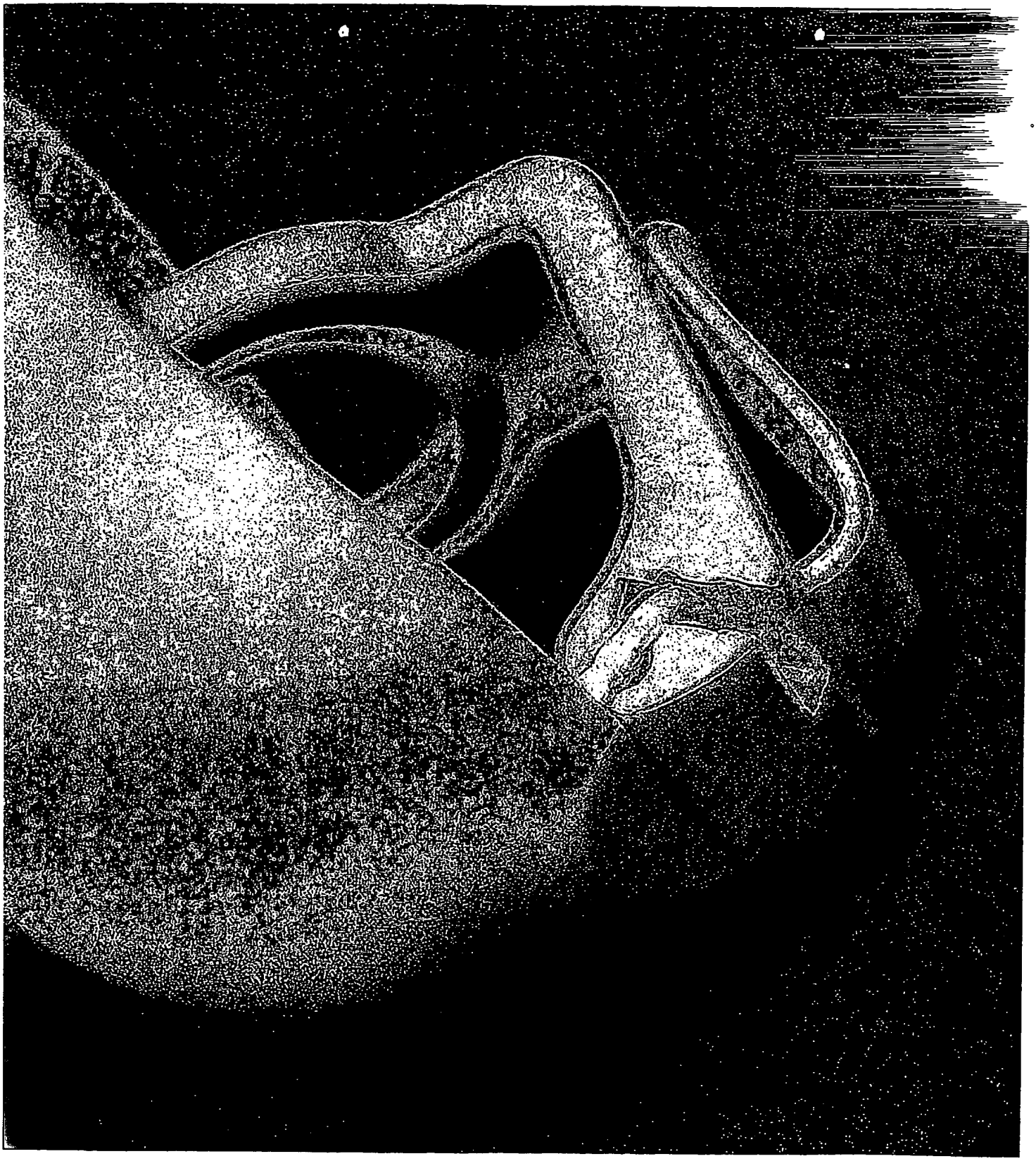


FIG 15a

FIG 15b

FIG 15c

FIG 15d

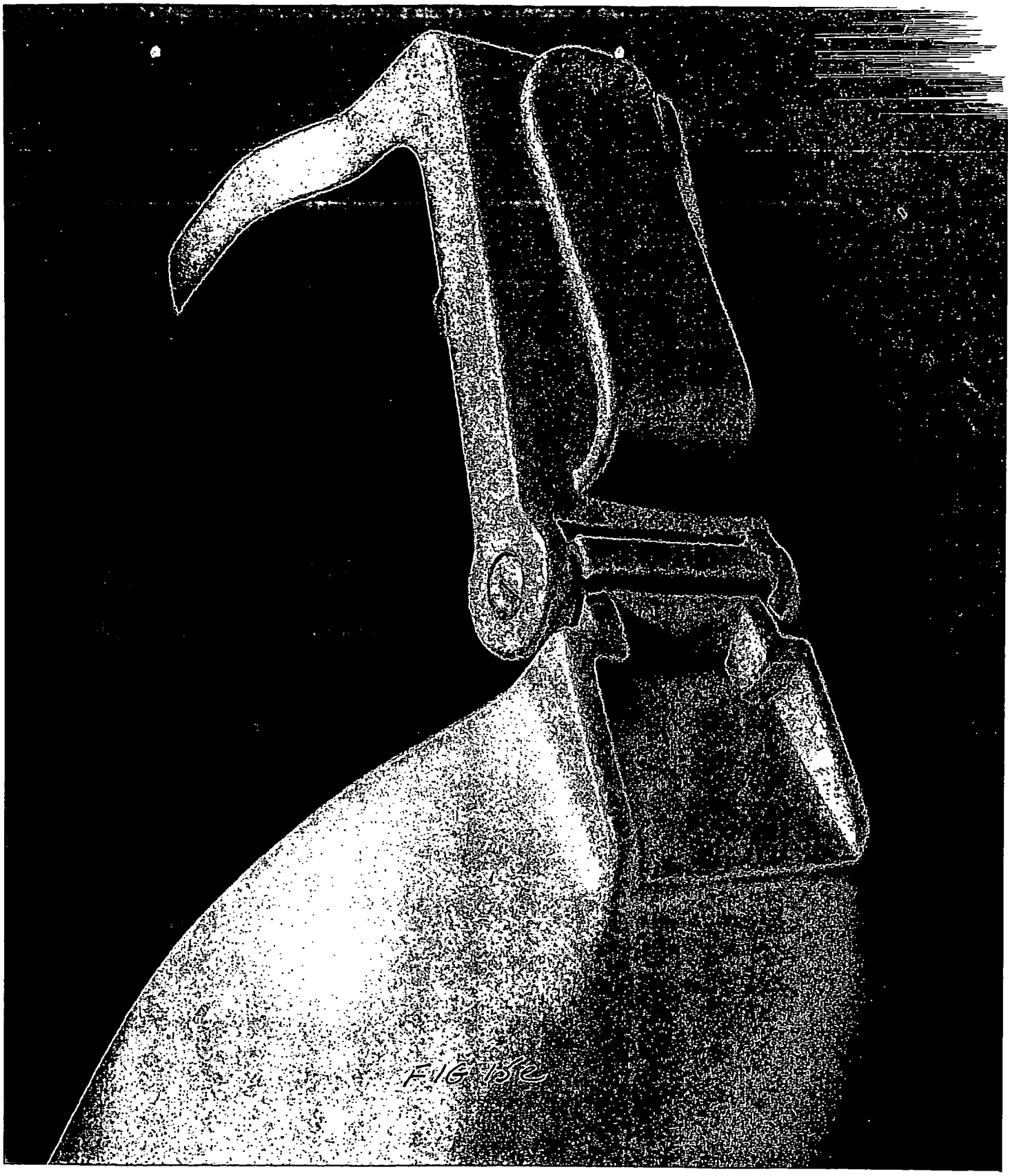


FIG 15c

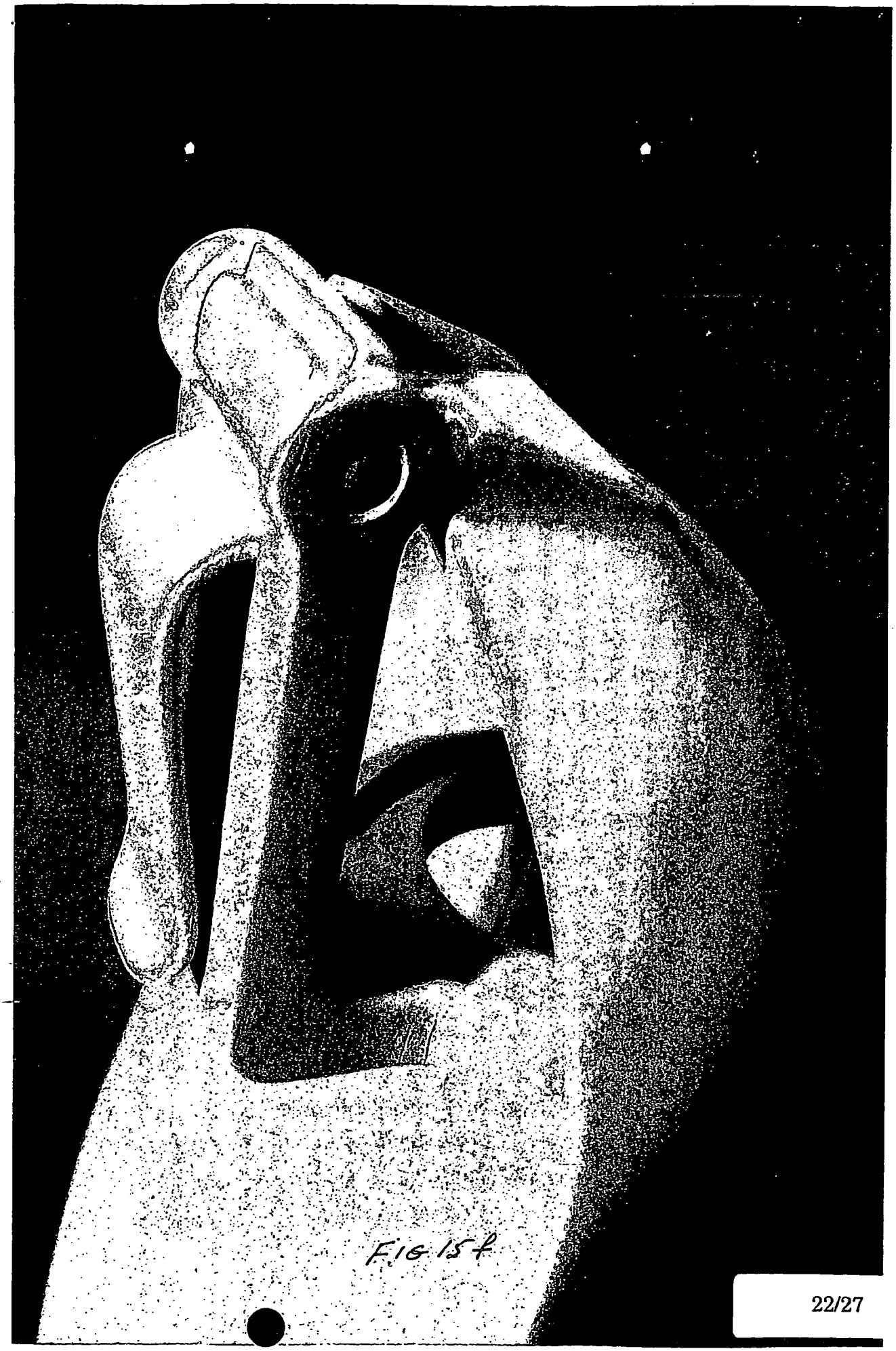
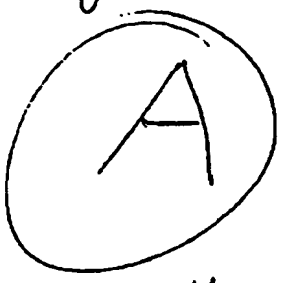
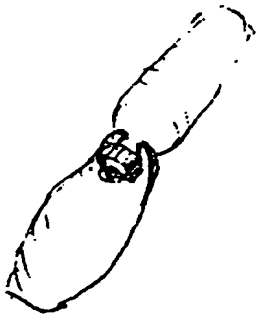


FIG 15f

All-In-One-Piece
Clip-Snap Attach
No hinge



"Serving" position



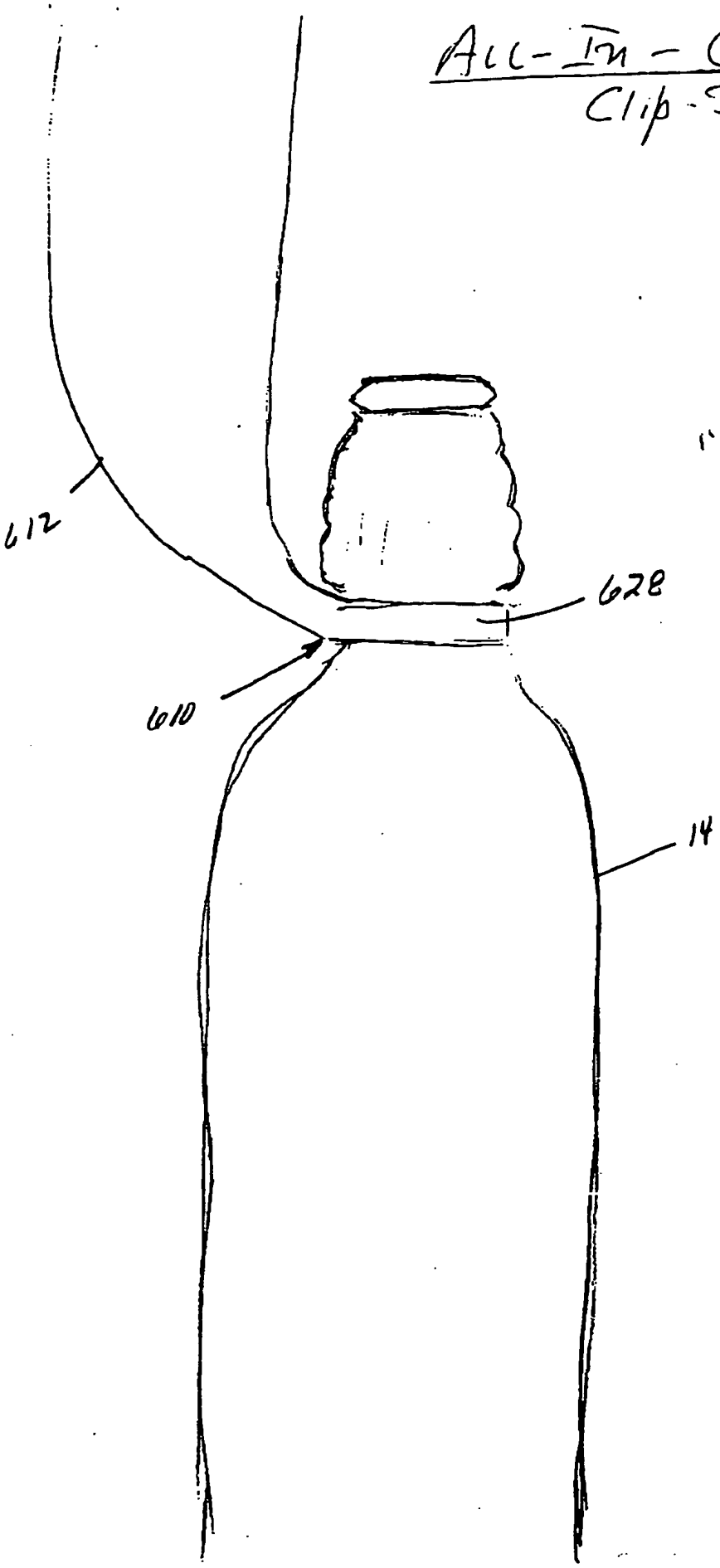


FIG 16

10/17/03

All-In One-Piece

Clip-Snap Attach

B

"Storage position"

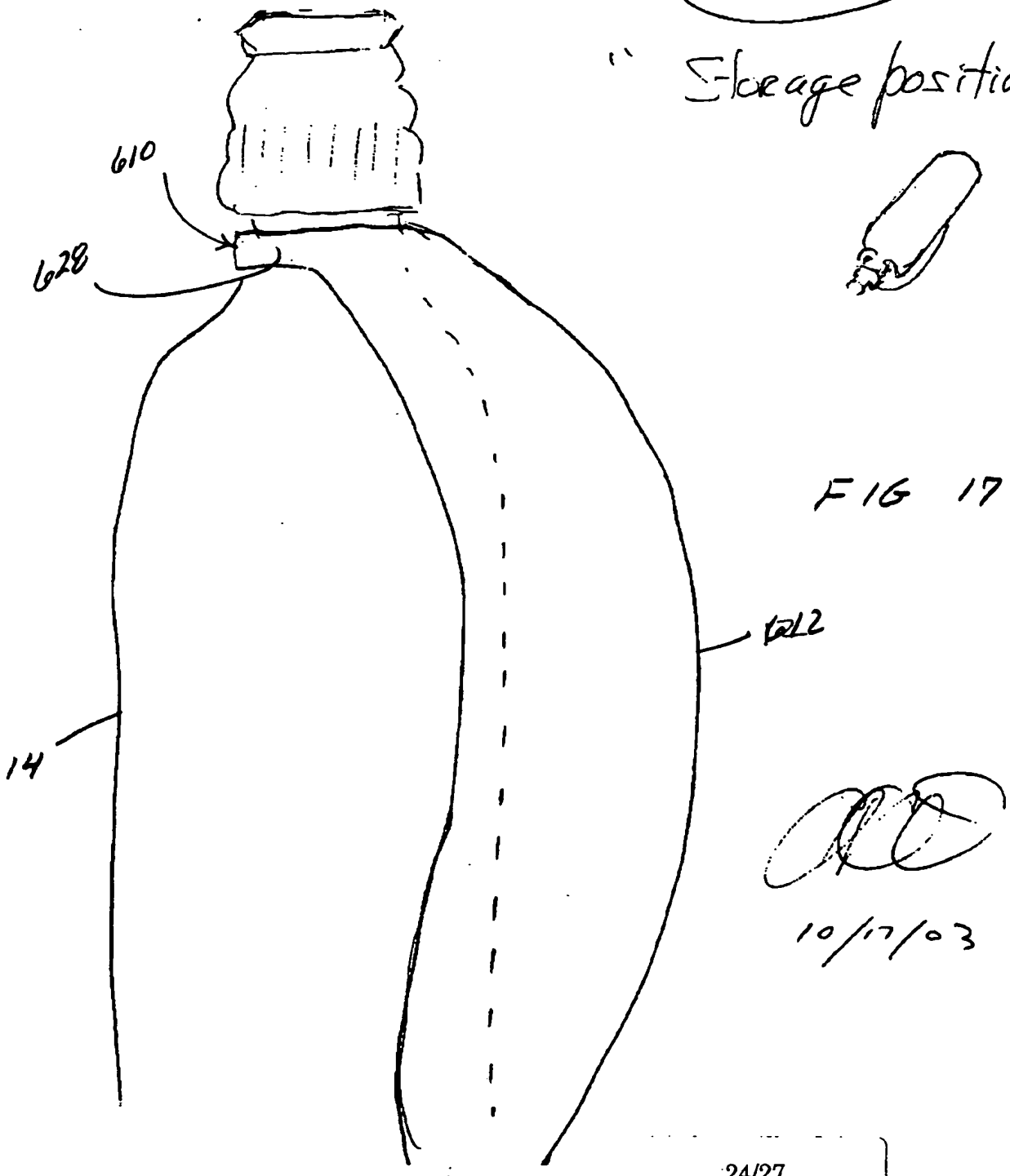
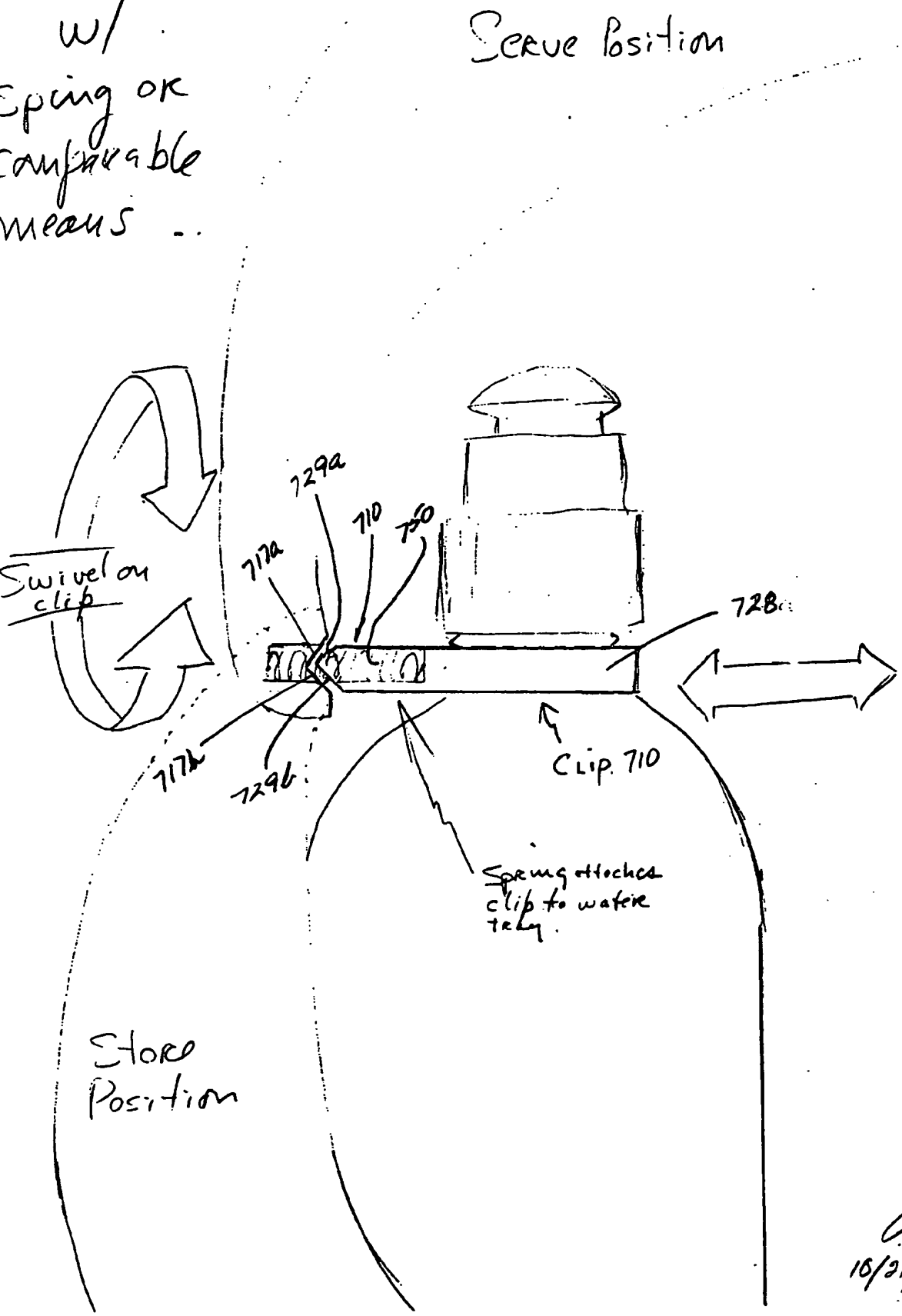


FIG 17

10/17/03

2: Position Swivel attachment w/ Spring or comparable means ..

FIG. 18



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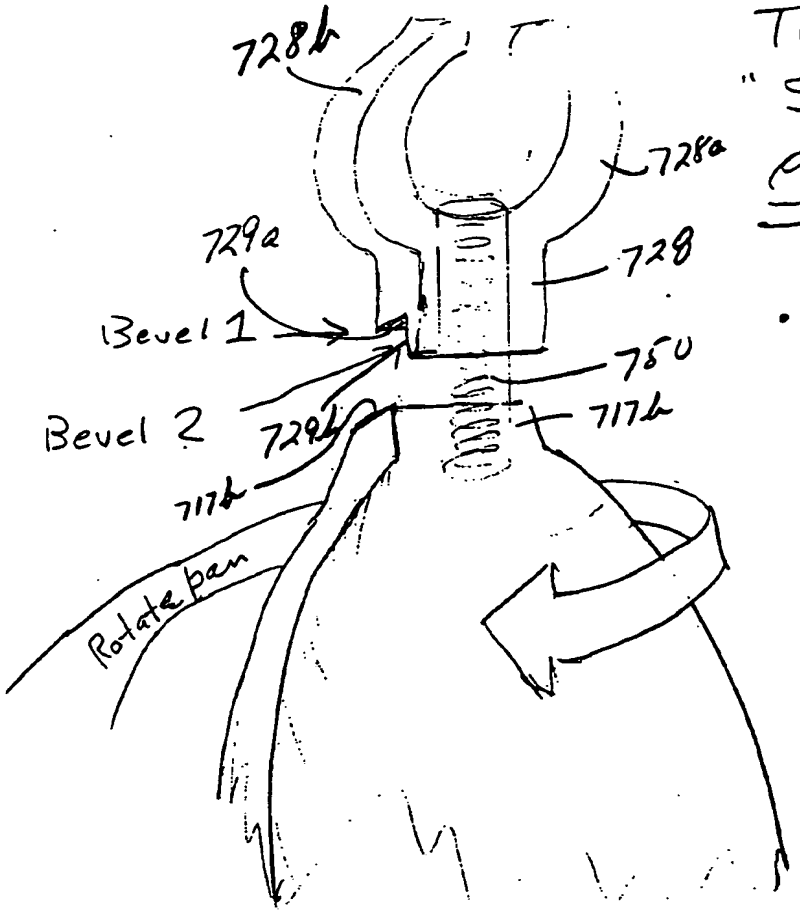
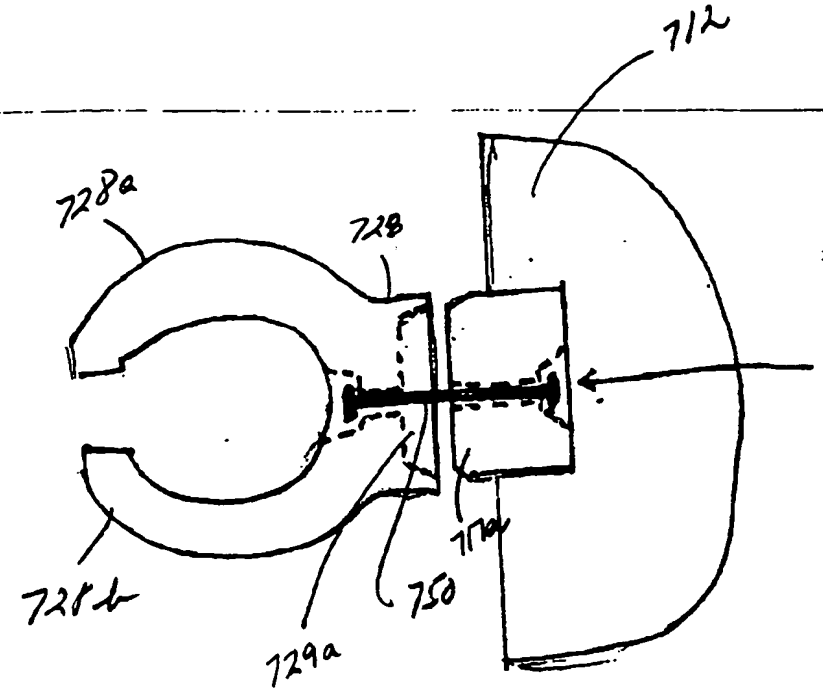


FIG 19

Two-Position "Spring load" swivel attachment

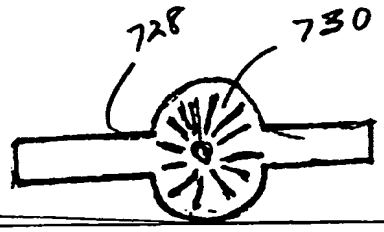
- Clip remains attached to the bottle neck
- Water tray is connected to clip by spring or other elastic means.
- Pull water tray away from bottle and swivel from the storage position (Bevel 1) OR serving position (Bevel 2) stop-locators molded in to the juncture of clip and water

10/20/03



Bungee cord with securement knots on each end , or any elastic or spring-like material

Back view of clip



A spinning ratchet with the attachment for bungee through the center

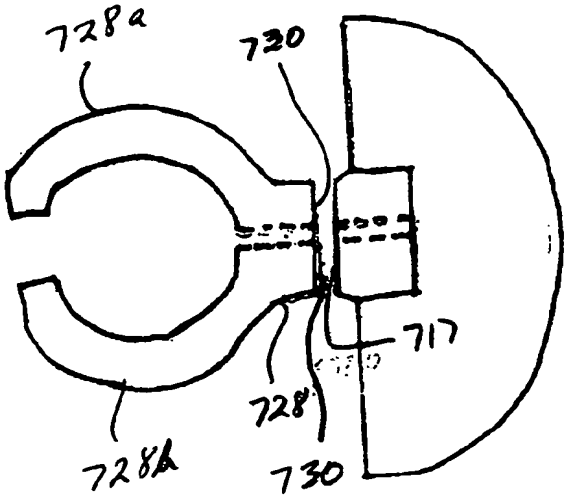


FIG 20

10/20/03

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